WHAT IS CLAIMED IS

1. A system for multiple image analysis comprising:

a first light source;

a second light source;

a camera; and

a multiple image processor coupled to the first light source, the second light source, and the camera, the multiple image processor causing the first light source and the second light source to turn on and the camera to generate two or more sets of image data.

2. The system of claim 1 wherein the first light source emits light having a first frequency and the second light source emits light having a second frequency.

3. The system of claim 2 wherein the camera can generate two or more sets of image data when both the first light source and the second light source are emitting light.

4. The system of claim 2 wherein the camera further comprises:

a first set of pixels receiving light at the first frequency; and

a second set of pixels receiving light at the second frequency.

5. The system of claim 2 wherein the camera further comprises:

a first filter passing light at the first frequency; and

a second filter passing light at the second frequency.

6. The system of claim 1 wherein the multiple image processor further comprises a light sequence controller causing the first light source and the second light source to turn on and turn off.

7. The system of claim 1 wherein the multiple image processor further comprises an image analyzer receiving the two or more sets of image data and generating status data that indicates whether the image data is acceptable.

8. The system of claim 1 wherein the multiple image processor further comprises a first image analyzer receiving the first set of image data and a second image analyzer receiving the second set of image data and generating status data that indicates whether the image data is acceptable.

9. The system of claim 1 wherein the multiple image processor further comprises an image comparator receiving the two or more sets of image data and generating difference data.

10. The system of claim 1 wherein the multiple image processor further comprises an image constructor receiving the two or more sets of image data and generating dimensional variation data.

11. A method for inspecting a component comprising:

illuminating the component from a first illumination angle;

receiving first image data of the component;

illuminating the component from a second illumination angle;

receiving second image data of the component; and

using the first image data and the second image data to determine whether a dimension of the component is acceptable.

12. The method of claim 11 wherein illuminating the component from the first illumination angle and illuminating the component from the second illumination angle further comprises illuminating the component using light having a first frequency from the first illumination angle and illuminating the component using light having a second frequency from the second illumination angle.

13. The method of claim 11 wherein receiving the first image data of the component comprises receiving the first image data of the component by filtering light received from the component.

14. The method of claim 11 wherein receiving the first image data of the component and receiving the second image data of the component comprises receiving the first image data of the component by filtering light received from the component with a first filter and receiving the second image data of the component by filtering light received from the component with a second filter.

15. The method of claim 11 wherein receiving the first image data of the component comprises receiving the first image data of the component with a first set of pixels.

16. The method of claim 11 wherein receiving the first image data of the component and receiving the second image data of the component comprises receiving the first image data of the component with a first set of pixels and receiving the second image data of the component with a second set of pixels.

17. A method for inspecting a component comprising:

receiving first image data and second image data of the component;

comparing the first image data to reference image data to generate first difference data;

comparing the second image data to reference image data to generate second difference data; and

generating component dimension data from the first difference data and the second difference data.

18. The method of claim 17 further comprising:

combining the first image data and the second image data to generate composite image data;

comparing the composite image data to composite reference data to generate composite difference data; and

generating component dimension data from the composite difference data.

19. The method of claim 17 wherein the step of receiving the first image data and the second image data of the component is preceded by the step of receiving status data that indicates that the component requires additional analysis to determine whether it has unacceptable dimensional variations.

20. The method of claim 17 wherein generating the component dimension data from the first difference data and the second difference data further comprises using light source angular data to generate the component dimension data.